

Comment No.	Comment	Response
Colorado Department of Public Health & Environment (CDPHE) Comments		
	General Comment	
1	<p>The draft RI/FS understates the type and extent of institutional controls that are necessary to ensure protection of human health and the environment. There are several reasons for this:</p> <ul style="list-style-type: none"> • The document implicitly assumes the existence of numerous restrictions on land use (institutional controls), and consequently fails to identify and analyze the need for such controls. • Differences between the “action level” orientation to cleanup under RCRA/CHWA corrective action and the site-specific risk assessment required under CERCLA. RFCA’s Attachment 5 (the Action Level Framework) reflects the first approach, while the RI/FS and the underlying Comprehensive Risk Assessment Methodology focus largely on the latter. • The biased sampling methodology was not designed to detect all possible hot spots, but rather to efficiently characterize areas of possible, suspected or known contamination. <p>These comments will be explained in greater detail in the “specific comments” section, below.</p>	Please see responses to specific CDPHE comments below.
	Specific Comments	
1	ES-4 Section 2.3, last sentence: Replace “may” with “will.”	Change made.
2	ES-8 section 4.3: Typo at end of paragraph looks like it should be “5.0 through xx”	The end of the last sentence in the last paragraph will be corrected as follows: “... are found in Sections 5.0.”
3	Section 5.2 and Fig ES.4 – Please expand this discussion and make appropriate changes to include the sentinel well recently	The text will be revised to reflect the groundwater conclusion found in Section 8.4.3.

	placed south of S. Walnut Creek across from former B991 to check on the potential plume that may emanate from the disrupted gravel drain that was carrying contaminated water to the discharge pipe that was removed.	<p>The well (45605) placed south of S. Walnut Creek across from former B991 was installed after July 31, 2005 and data from that well is not used in the RI/FS evaluation.</p> <p>Figure ES.4 will not be changed. Figure ES.4 reflects the groundwater and surface water locations evaluated in the RI/FS Report. Section 11.0 references the FY 2005 IMP, Revision 1, as the source for the groundwater monitoring locations for purposed of the final remedy. The well referred to in the comment is included in the FY 2005 IMP, Revision 1.</p>
4	Section 5.2, last bullet/paragraph – Please remove this statement/bullet or properly modify it to make an appropriate statement. Considering that contaminated groundwater above MCLs requiring treatment can be found outside the former IA boundary, this appears to be an incorrect statement that needs to be changed. However, it is our understanding that groundwater leaving RFETS is acceptable for all uses.	<p>The last bullet/paragraph in Section 5.2 (now Section 6.2) is a separate paragraph and will be revised as follows:</p> <p>“Groundwater contamination above maximum contaminant levels (MCLs) exists in some areas of RFETS;however, groundwater outside the former IA is acceptable for all uses.”</p>
5	Section 5.2, next to last paragraph - Please modify the last sentence of the next to last paragraph (before the last bullet/paragraph) to properly convey the thought being made, since the last sentence does not appear to make sense. Since when is the “goal” of groundwater to protect surface water? It is our understanding that groundwater must be cleaned up as necessary to prevent contamination of surface water, to be protective of surface water. As such please rephrase this discussion.	No change made. It is a goal of the CERCLA program to return groundwater to its beneficial use.
6	ES-13, section 6. This would be a good place to highlight that the CRA fulfills CERCLA requirements for a risk assessment (40 CFR § 300.430(d)(4)), and does not address RCRA/CHWA requirements. Perhaps something like the following: “CDPHE defines acceptable risk to human health under	<p>The RFCA Parties have worked on and agreed to the following language:</p> <p>“CDPHE guidance requires evaluation of contaminant concentrations on a solid waste management unit or release site basis. As discussed in Section 1.2.3, this was implemented at</p>

	<p>RCRA/CHWA somewhat differently than EPA does under CERCLA and the NCP. One of the key differences is that under RCRA/CHWA, human health risk is evaluated on an individual release site basis, as opposed to the exposure unit approach followed under the NCP and in the CRA for Rocky Flats. Individual release sites with hazardous constituent contamination that presents a cancer risk exceeding 10^{-6} or a hazard index of 1 for the anticipated user require a Corrective Measures Study to identify appropriate corrective actions. Corrective actions include treatment, removal, and physical or institutional controls. The accelerated action approach used at Rocky Flats was applied on an individual release basis. Contamination in excess of levels corresponding to a cancer risk of 10^{-5} or hazard index of 1 for a WRW was treated or removed. Sections 3 through 6 of the RI/FS identify areas of the site where contamination remains above cancer risk levels of 10^{-6} or HI of 0.1. These areas are addressed in the CMS (sections 9 and 10)."</p>	<p>RFETS on an IHSS-by-IHSS basis during the accelerated action process. As noted in Section 1.4.3, by addressing cumulative impacts from multiple release sites, the CRA's exposure unit approach complements, but does not supplant, the Colorado Hazardous Waste Act's (CHWA's) emphasis on individual release sites. Because the parties had anticipated using institutional controls consistent with the anticipated future use of the site, CDPHE determined that a post-remediation analysis of residual risk on a release site basis was not necessary."</p> <p>This language will be incorporated in the Executive Summary and throughout the body of the Report.</p>
7	<p>ES-13, section 6.1: It would be helpful to explain briefly why there are no subsurface COCs.</p>	<p>Based on the steps of the COC identification process, no COCs were identified for subsurface soil/subsurface sediment in the HHRA for any of the EUs. This explanation will be added to Section 6.1.</p>
8	<p>Section 6.4 – It is suggested that this discussion be modified to identify that the evaluation of indoor air was performed even though no structures are supposed to be constructed in the IA or in areas with known VOC contamination.</p>	<p>No change made. The indoor air inhalation pathway was identified as an insignificant pathway in the CRA Methodology. The CRA Methodology required that the evaluation be completed to confirm that this pathway was correctly identified as insignificant. The result of the evaluation is that the indoor air inhalation pathway is a potential indoor air risk in the IAEU and several adjacent EUs if buildings were constructed. The result is further evaluated in the FS.</p>
9	<p>Section 8.1.1, RAO 2 – Please provide additional discussion and modify this discussion to properly recognize that contaminated groundwater is to be remediated to prevent degradation of surface water quality and thereby be remediated to be protective</p>	<p>The text will be revised to reflect the groundwater RAO 2 conclusion found in Section 10.2.2.2.</p> <p>Please see response to CDPHE specific comment 5.</p>

	of surface water. It is not correct to state that groundwater has a “beneficial use of surface water protection”. As such, please modify this to provide a correct statement. Also, please provide a discussion that the concern with remaining groundwater contamination and possible future concerns (adverse effects on surface water quality) will be addressed and evaluated in the FS & CAD/ROD.	Section 8.1.1 (now Section 9.1.1) is a summary of the RAO evaluation which is part of the FS.
10	ES-17 – Should clarify that GW RAO 3 is not met without institutional controls.	The text will be revised to reflect the groundwater RAO 3 conclusion found in Section 10.2.2.3.
11	Section 8.1.2 – Please modify this discussion to recognize that surface water quality is supposed to meet WQCC standards everywhere on site, not just at the POCs (where compliance will be measured). Only exception being the on-site Nitrate levels down gradient of the Solar Pond Treatment Unit, which has been temporarily allowed to be above the WQCC standards (except at the POCs), but will eventually need to meet the appropriate standards. As such, this RAO may currently be met at the POCs but not everywhere on site. Therefore, the broader goal of this RAO has not been met. As such, please appropriately expand this discussion.	The text will be revised to reflect the surface water RAO conclusion found in Section 10.3.2.1.
12	Section 8.1.3, RAO 1 – Please provide further discussion regarding how Soil RAO 1 has been met. Soil contamination that may leach into and contaminate groundwater resulting in an exceedance of the GW RAOs still exists on site (B730 area, 903 Pad, Oil burn Area, Solar Ponds, etc), which raises concerns that although there are currently no known releases, it is difficult to state that this RAO has been met.	The text will be revised to reflect the soil RAO 1 conclusion found in Section 10.4.2.1.
13	Section 8.1.3, RAO 2 – Please provide further discussion regarding how Soil RAO 2 has been met. Expand this discussion to recognize that groundwater continues to be adversely effected by remaining soil contamination, which could adversely affect the groundwater RAOs in the future, which could adversely affect the surface water RAOs in the future.	The text will be revised to reflect the soil RAO 2 conclusion found in Section 10.4.2.2.

	<p>This remaining soil contamination continues to be released into the groundwater and into surface water from the east trenches into Pond B2, and into North Walnut Creek from the Solar Ponds (the elevated nitrate levels). In addition, there remain other areas of soil contamination and related plumes, such as the Carbon Tetrachloride plume from the B730 area and the newly disrupted VOC contamination south of B991 that could still cause future issues with the groundwater and surface water RAOs. This raises concerns that this RAO has yet to be met.</p>	
14	<p>Section 8.1.3, RAO 3 – Please provide further discussion regarding how Soil RAO 3 has been met regarding unrestricted future use of this area considering the remaining levels of plutonium contamination. Specifically, need to properly address the apparent contradiction/confusion in statements in the 3rd and 5th paragraphs. In the 3rd paragraph it is stated that this area is ok for unrestricted use, but in the 5th paragraph it indicates that it does not meet the requirements for unrestricted use. As such please provide additional discussion regarding the differences between “dose” and “risk”.</p>	<p>The text will be revised to reflect the soil RAO 3 conclusion found in Section 10.4.2.3.</p>
15	<p>ES-18, discussion of Soil RAO 3 – This is an example of where the document implicitly assumes certain use restrictions are in place. There is residual soil contamination at levels that exceed 10^{-6} for an unrestricted use scenario. Calculated risks to the WRW and WRV are what they are in part because of exposure assumptions in the CRA methodology. To achieve the WRW and WRV risk levels calculated in the CRA, there needs to be use restrictions that are consistent with the WRW and WRV exposure assumptions, in order for this RAO to be met. The potential for unknown hot spots also warrants use of institutional controls. Finally, to meet this RAO for purposes of RCRA/CHWA, institutional controls would be necessary for areas of residual hazardous constituent contamination in excess of 10^{-6} or HI of 1, as discussed above.</p>	<p>Please see response to CDPHE specific comments 6 and 14. Please see Executive Summary Section 7.0, Reconfiguration and Renaming of the OUs.</p>

16	<u>ES Section 8.1.3 (p. ES-18)</u> – The state radiological decommissioning requirements are considered relevant and appropriate requirements – should they be cited in the 3 rd paragraph under Soil RAO 3? The dose assessment, which will be attached to the RI/FS, is the basis for the statement at the end of this paragraph (and in requirement 6 on the following page) and should probably be cited here.	The paragraph in question will be deleted and the text will be revised to reflect the soil RAO 3 conclusion found in Section 10.4.2.3.
17	Section 8.2 - #1 As discussed above, surface water quality standards are not met everywhere on site. This needs to be recognized and discussed. #2 As discussed above, groundwater standards are not met everywhere on site and currently contributes to surface water exceedances. In addition, future issues could cause problems that may need to be recognized and addressed. Also, additional actions “can” always be taken. Therefore, please change this inappropriate statement. #6 Although this discussion may be appropriate for this ARAR, it again appears to indicate that this area is ok for unrestricted (residential) use, which is not a correct statement from a risk perspective. #7 & #8 please include a recognition and discussion of the Solar Ponds RCRA Unit closure, effluent, and treatment.	The text will be revised to reflect the text in Section 10.5.2.
18	ES-20 – The Environmental Covenant ARAR is not met by the accelerated actions, because no covenant has been executed (even when the PLF EC is executed, it will only include IC’s related to the PLF itself).	The text will be revised to reflect the text in Section 10.5.2.
19	Section 9 – Please modify the statement in the last paragraph regarding the RAOs and ARARs being met (not) in the IA OU. Modify as previously discussed above.	The text will be revised to reflect the text in Section 9.6.
20	Section 10.0 – It is our understanding that there remain some potential issues with the proper and successful operation of at least some of the treatment systems. As such please modify the statement in the 3 rd bullet by removing the statement, “which are operating properly and successfully”. Also, please remove the same language from the next paragraph in regard to the Present	The text will be revised to reflect that the systems are operating as designed rather than operating properly and successfully.

	Landfill treatment system.	
21	Section 10.0 – Please modify the last paragraph, as per previous comments, to remove the “beneficial” use of groundwater is to protect surface water.	No change made. Please see response to CDPHE specific comment 5.
22	Section 10.2 – 1 st Paragraph, 4 th Sentence - Please also include other physical controls in addition to signage, such as fencing or other barriers to control/restrict access.	The text will be revised to reflect the text in Section 11.3.1.2.
23	Section 10.2 – 5 th Bullet - Please modify to include prohibition or restriction of any activity that would disturb the soil or cover.	The text will be revised to reflect the text in Section 11.3.1.2.
24	ES-22, first para. – Strike the second sentence. The no action alternative cannot include a new response action, and an institutional control (the EC) is a response action.	The text will be revised to reflect the text in Section 11.3.1.2.
25	EC-22, section 10.2 (“Alternative 2”) – The first paragraph should be revised to indicate that IC’s will also be added to: ensure future site use is consistent with the exposure assumptions in the CRA; meet CDPHE risk management policies; and address the potential for unknown subsurface hot spots.	The text will be revised to reflect the text in Section 11.3.1.2.
26	EC-22, next to last para. – I suggest striking this paragraph, as it is unnecessary, speculative, and overly broad (IC’s are required for reasons other than to meet SW standards or to prevent indoor air volatilization problems).	The text will be revised to reflect the text in Section 11.3.1.2.
27	Section 10.3 – Please modify to state why it is “not technically feasible to remove all contamination”, or remove this statement. Also, please indicate if this statement is suggesting “all” contamination, or all contamination above 9.8 pCi/g. It seems inappropriate to suggest it impossible to remove all of the contamination above the WRW PRG if attempted. Rather, the cost to accomplish this would be even higher than projected for a 90% confidence, or even a 95% confidence.	The text will be revised to reflect the text in Section 11.3.1.3.
28	Section 10.5 – 2 nd Paragraph, 3 rd Sentence – Please remove “(signage)”, as this implies a specific restriction of the physical controls that will be implemented.	The text will be revised to reflect the text in Section 11.4.
29	ES-23 first para. under 10.5 – Revise consistent with the	The text will be revised to reflect the text in Section 11.4.

	following: Alternative 1 does not meet ARARs due to the lack of an EC. Alternative 1 does not meet soil RAO #3 for several reasons, as discussed in comments above, not just because of indoor air volatilization. First sentence should say "... <i>or</i> groundwater RAO 3"	
30	Table ES.1 page 4 – The CRA COS column states there are no subsurface soil COC's. This is not true under the more conservative CHWA approach noted above. Areas of subsurface hazardous constituent contamination exceeding WRW PRG's, as described in the Nature and Extent section, should be carried forward for analysis in the CMS.	No change made. Please see response to CDPHE specific comment 6.
31	<u>Table ES.2</u> – In the row for "Reduction of Toxicity, ...", the 4 th bullet under Alternative 1 states that all accelerated actions included removal. The soil treatment and replacement that was part of the Ryan's Pit and Trenches T3/4 is an exception.	Table ES.2 will be revised to reflect Table 11.1.
32	Table ES.2, page 1, NFA alternative – The compliance with ARARs box incorrectly states that all ARARs are met. The EC ARAR is not met. Also, cannot assume that OLF IC's are in place. They are not, and implementing them constitutes a response action.	Table ES.2 will be revised to reflect Table 11.1.
33	Table ES.2, NFA alternative, reduction of toxicity, etc. – Some accelerated actions involved treatment and replacement of contaminated media, not removal.	Table ES.2 will be revised to reflect Table 11.1.
	Editorial Comments	
1	ES-10, first line: Strike "is," insert "are"	Change made.
U.S. Environmental Protection Agency (EPA) Comments		
	General Comments	
1	In several places the term "legacy waste" is used. This includes page ES-3, third paragraph; page 1-2, twice in the forth paragraph; and page 1-4, forth bullet. Because this term has no significance under RCRA or CERCLA, please delete. It is also recommended to do a global search throughout the document and	The words "legacy waste" will be deleted from the indicated text locations and replaced with "previously generated process wastes". A global search was completed and changes made.

	delete if found.	
2	The term “operating properly and successfully” is used to refer to groundwater systems throughout the document. This includes page ES-19, paragraph 2; and page ES-21. Because no operating properly and successfully determination has yet been made by EPA, please substitute language agreed upon from previously submitted comments. It is also recommended to do a global search throughout the document and delete if found.	A global search shows the “properly and successfully” term is also used in section 9.5.2. This term will be replaced in the indicated ES locations and section 9.5.2 to be consistent with section 11.3.3.1, subsection 5, as follows: “...operating as designed to remove contamination in captured groundwater . . .”
3	Text of the Executive Summary should be revised to reflect changes to the main body of the report.	Changes made to the ES reflect the current text in the main body of the report.
	Specific Comments	
1	Page ES-3, Section 2.1, third paragraph: Please include special nuclear materials (SNM) in the list of Acronyms and Abbreviations.	Change made.
2	Page ES-6, Section 3.4, 2nd paragraph: The text describes the site as having impermeable surfaces (i.e., pavement) impacting surface water flow. This seems confusing as it infers that pavement needs to be removed as a future action. Please revise the text and its conclusion to reflect that all pavement has been removed.	The text will be revised to reflect the text in Section 2.2.
3	Page ES-7, Section 4.1: The text indicates that fourteen soil analytes of interest (AOIs) were identified. As currently written, AOIs only reflect the Wildlife Refuge Worker PRGs and do not include ecological screening levels. The executive summary section will require revision based on future comments on the Nature and Extent section intended to provide a more comprehensive discussion of risk.	The text will be revised to reflect the text in Section 3.0.
4	Page ES-11, Section 5.2, Fourth paragraph: The final sentence states “This protection also serves to meet long-term goals for returning groundwater to its beneficial use of surface water protection.” Consider rephrasing or deleting this sentence as its intent is unclear.	No change made.
5	Page ES-13, Section 6.1, 3rd full paragraph: Indicates that the	The text will be revised to reflect the text found in Section 7.7.

	benzo(a)pyrene samples are "... now several feet underneath a landfill cover." Please revise this statement to identify the Original Landfill.	
6	Page ES-1 4, Section 6.3: The statement that "Ingestion of groundwater is an incomplete pathway . . . " should be clarified as to describe why it is an incomplete pathway (i.e., institutional controls) .	The text will be revised to state: As described in Volume 2 of the CRA, the RFCA Vision states that on-site groundwater will not be used for any purposes unrelated to RFETS cleanup activities. Therefore, the pathway for direct ingestion of groundwater is incomplete.
7	Page ES-1 7, Groundwater RAO 1: Please describe the monitoring performed to demonstrate how this RAO is met.	The text will be revised to reflect the groundwater RAO 1 conclusion found in Section 1 0.2.2.1 .
	Editorial Comments	
	None	
U.S. Fish and Wildlife Service's (USFWS) Comments		
	General Comments	
	None	
	Specific Comments	
	None	
	Editorial Comments	
	None	